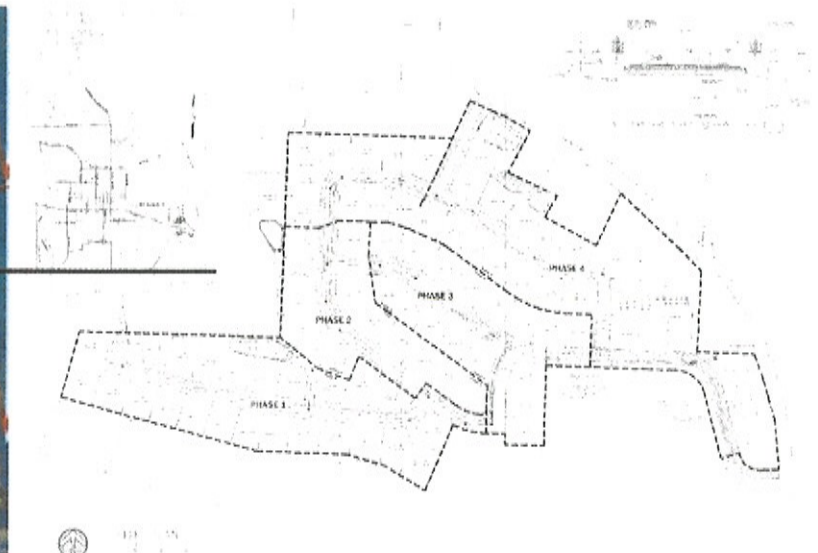
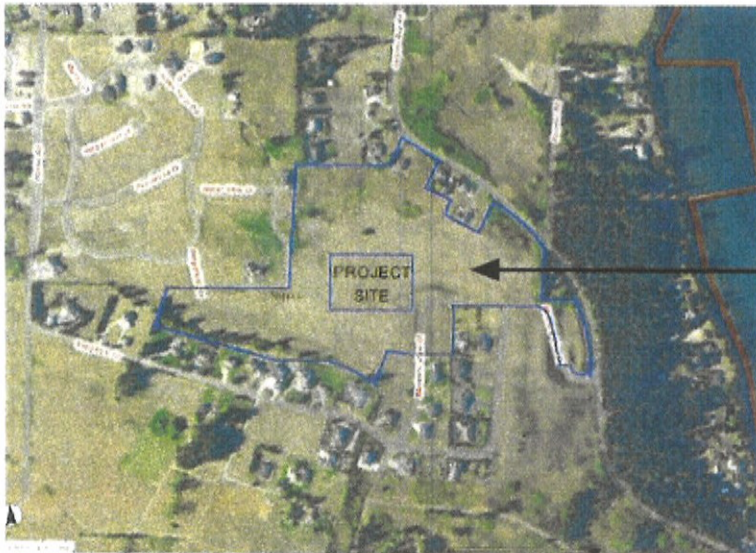


Sequim

MARINERS OUTLOOK TRAFFIC IMPACT ANALYSIS

October 19, 2018



JTE . Jake Traffic Engineering, Inc.

Mark J. Jacobs, PE (OR and WA), PTOE, President

2614 39th Ave SW – Seattle, WA 98116 – 2503

Tel. 206.762.1978 - Cell 206.799.5692

E-mail jaketraffic@comcast.net





October 19, 2018

MARINER INVESTORS

C/O CA Homes, Inc.

Attn: Christopher Anderson, Owner

495 W Spruce St, Suite 3

Sequim, WA 98382

Re: Mariners Outlook– Sequim, WA
Traffic Impact Analysis

Dear Mr. Anderson,

I am pleased to present this Traffic Impact Analysis for the ~80 lot Mariners Outlook SFDU residential project located west of W. Sequim Bay Road and north of Mariners View Drive in the City of Sequim. The project is to be constructed in four phased. Access to the project would be via a new intersection on W. Sequim Bay Rd. and via existing Mariners View Drive intersection with W. Sequim Bay Road.

The Scope of Work for this study is based on recent work experience in Sequim and my extensive traffic engineering work conducted. Per my review of the site the following intersections are studied in this report.

1. W. Sequim Bay Rd. at Mariners View Drive.
2. W. Sequim Bay Rd. at Site Access

I have inspected the site and surrounding street system. The general format of this report is to describe the proposed project, identify existing traffic conditions (baseline), project future traffic conditions and identify Agency street/road improvements (future baseline), calculate the traffic that would be generated by the project and then add it to the future baseline traffic volumes. Operational analyses are used to determine the specific project traffic impact and appropriate traffic mitigation measures to reduce the impact.

The summary, conclusions and recommendations begin on page 11 of this report.

PROJECT INFORMATION

Figure 1 is a vicinity map which shows the location of the site and the surrounding Street system.

Figure 2 shows the Review Copy site plan prepared by Zenovic & Associates dated August 3, 2018. The site plan shows 80 lots for SFDU's, storm water management areas and internal

MARINER INVESTORS
C/O CA Homes, Inc.
Attn: Christopher Anderson, Owner
October 19, 2018
Page -2-

streets. Access to the project would be via the extension Mariners View Drive and a new Access Intersection with West Sequim Bay Road.

Full development and occupancy of the proposed Mariners Outlook project is anticipated to occur by 2019/2020, presuming the permits are issued in a timely manner. However, to ensure a conservative analysis 2023 has been used as the horizon year.

EXISTING ENVIRONMENT

Project Site

An aerial image of the project site obtained from Clallam County GIS is depicted below.



The site currently is not developed

Street System

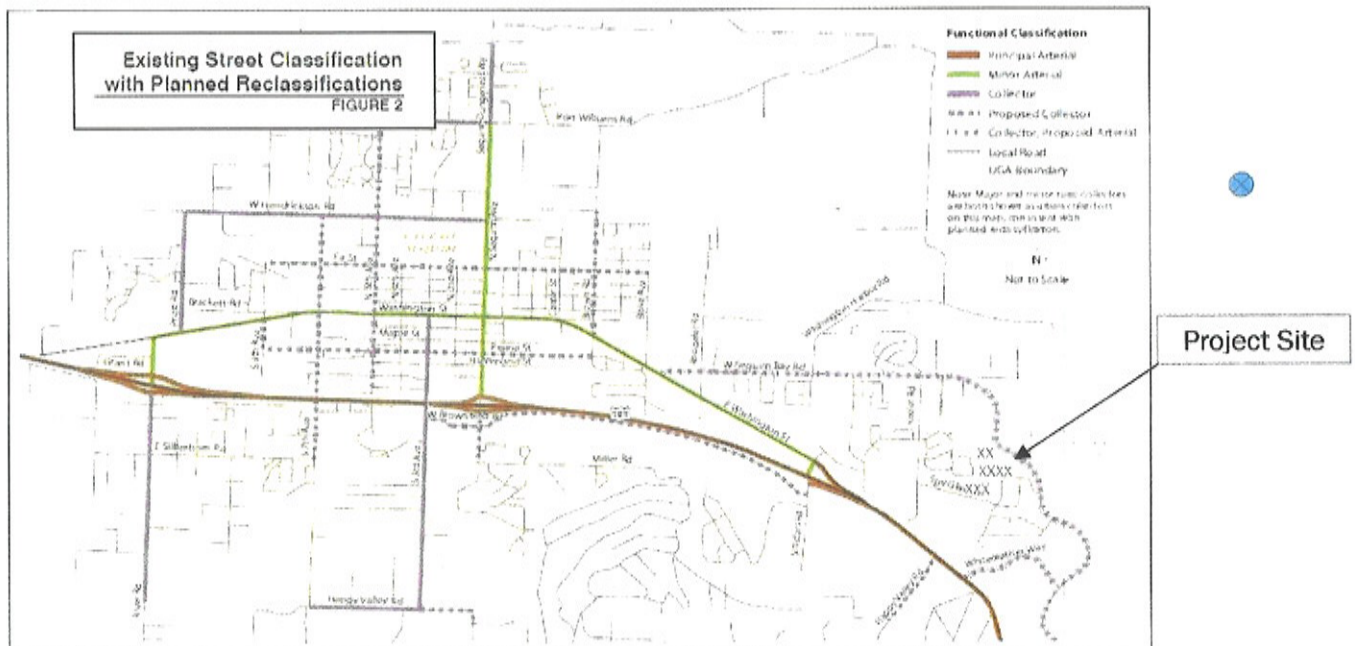
Figure 3 shows the existing traffic control, number of street lanes, number of approach lanes at intersections and other pertinent information. The primary streets within the study area

MARINER INVESTORS
 C/O CA Homes, Inc.
 Attn: Christopher Anderson, Owner
 October 19, 2018
 Page -3-

and their classifications per Figure 2 "Existing Street System with Planned Reclassifications" in the City of Sequim Transportation Master Plan, June 2013 are as follows:

- | | |
|------------------------|----------------------|
| ➤ SR - 101 | Principal Arterial |
| ➤ Washington Street | Minor Arterial |
| ➤ West Sequim Bay Road | Collector (proposed) |

Below is Figure 2: from Transportation Master Plan:



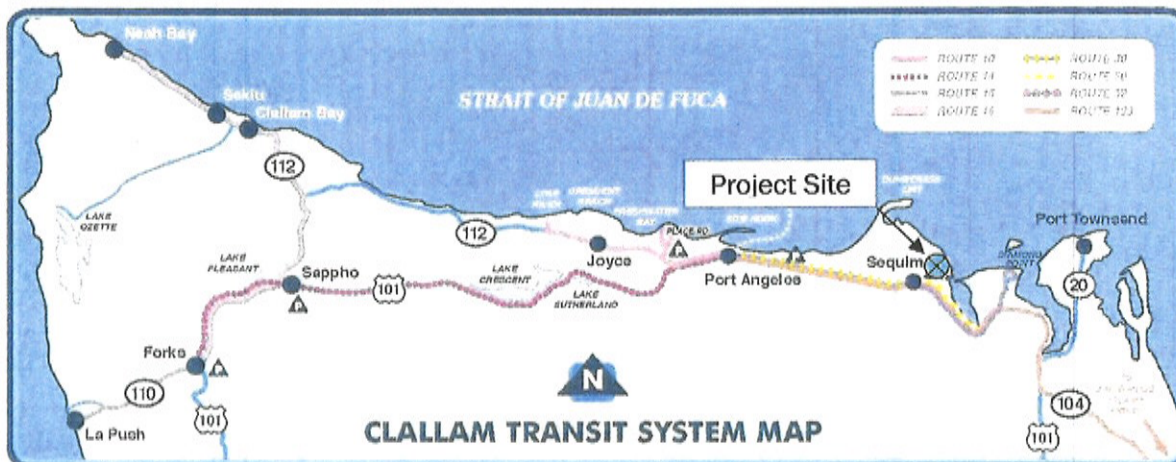
Pedestrian Facilities

Pedestrian facilities are limited in the immediate site vicinity.

Alternative Transportation

I have reviewed the Clallam County Transit services website for bus services in the vicinity of the proposed development. The map below is the Clallam Transit System Map. Routes 30 and 40 serve W. Washington Street at S. Priest Road. Further information on transit service can be obtained from the website; <http://www.clallamtransit.com/>.

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C/O CA Homes, Inc.
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October 19, 2018
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Schools

The Sequim School District online information indicates that students living in the Mariners Outlook would attend the following schools:

Helen Haller Elementary
School - Grades K-5
350 West Fir Street
Sequim, WA 98382
360-582-3200

Sequim Middle School
Grades 6-8
301 West Hendrickson
Sequim, WA 98382
360-582-3500

Sequim High School
Grades 9-12
601 North Sequim
Avenue
Sequim, WA 98382
360-582-3600

Students attending the above schools would be eligible for bus transportation.

Traffic Volumes

Figure 3 shows the existing PM peak hour traffic volumes at the analysis streets and intersections. Traffic Count Consultants, a firm specializing in the collection of traffic data, conducted PM peak period turning movement counts at the study intersections. The count data sheets are attached in the appendix.

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 C/O CA Homes, Inc.
 Attn: Christopher Anderson, Owner
 October 19, 2018
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Intersection Operations

Traffic engineers have developed criteria for intersection operations called level of service (LOS). The LOS's are A to F with A and B being very good and E and F being more congested. LOS C and D correlate to busy traffic conditions with some restrictions to the ability to choose travel speed, change lanes and the general convenience comfort and safety.

The procedures in the Transportation Research Board Highway Capacity Manual, 2010 were used to calculate the level of service at the study intersections. The following table depicts the LOS and corresponding average delay in seconds at signalized and stop control intersections:

Intersection Type	Level of Service					
	A	B	C	D	E	F
Signalized	<10	>10 and <20	>20 and <35	>35 and <55	>55 and <80	>80
Stop Control	<10	>10 and <15	>15 and <25	>25 and <35	>35 and <50	>50

LOS Analysis Criteria

City of Sequim:

Policy 7 in the City of Sequim Transportation Master Plan, June 2013 identifies the intersection LOS standard as "D" with Washington Street allowed to operate at capacity in downtown core and at "E" outside of downtown: see right:

WSDOT:

I have reviewed the WSDOT website (www.wsdot.wa.gov) for Level of Service thresholds. The website contained the "Level of Service Thresholds for State Highways Set by RTPOs" which identifies LOS on State Highways for various Counties. The pertinent section of Level of Service Standards for State Highways January 1, 2010 for Clallam County is below:

Policy 7: Develop a transportation system that achieves the following level of service (LOS) metrics:

Vehicular LOS: all City streets and intersections, except for Washington Street, are developed and maintained to provide a minimum of LOS D. Washington Street has a LOS F standard within downtown (5th to Brown) and must maintain a minimum of LOS E outside of downtown.

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 C/O CA Homes, Inc.
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Level of Service Standards for Washington State Highways
 January 1, 2010

WSDOT sets level of service (LOS) standards for state highways and ferry routes of statewide significance (HSS) based on RCW 47.06.140(2). Regional transportation planning organizations (RTPOs) and WSDOT jointly develop and RTPOs establish LOS standards for regionally significant state highways and ferry routes (non-HSS) based on RCW 47.80.030(1)(c). LOS is based on peak-hour except where noted.

Regional Organization/County	LOS for Non-HSS		LOS for HSS	
	Urban	Rural	Urban	Rural
(RTPO) Peninsula - RTPO				
Mason County	D	C	D	C
Jefferson County	D	C	D	C
Clallam County	D	C	D	C
Kitsap County	(see PSRC above)		D	C

The WSDOT LOS threshold for urban portions of Clallam County is identified at LOS 'D'.

LOS Analysis Software

The LOS of the study intersections were calculated using the Synchro software program. Table 1, at the end of the report prior to Figures, shows the existing LOS operations of the study intersections. The study intersection is operating at LOS 'A' that meet City criteria.

Incident/Safety History

Photographs at the study intersection are depicted below:



Mariners View Drive at West Sequim Bay Road – looking north and south, respectively

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The required Stopping Sight Distance for a 35 MPH speed per the American Association of State Highway and Transportation Officials “A Policy on Geometric Design of Highways and Streets” is 250 feet. The Entering Sight Distance is 390 feet. AASHTO identifies SSD as the critical sight line to be provided, see Section 9.5.1 attached in the Appendix.

Vegetation can affect sight lines and needs to be properly maintained. With vegetation pruned and maintained both the existing Mariners View Drive and proposed Site Access intersections with West Sequim Bay Road have appropriate sight lines.

Incident data was reviewed using the WSDOT accident data portal available online at <https://remoteapps.wsdot.wa.gov/highwaysafety/collision/data/portal/public/>. This portal was used to review incidents in the site vicinity for the years 2015 to 2017. The WSDOT data is attached.

Inspection of the incident data on West Sequim Bay Road showed no recoded incidents at the existing study intersection or in the vicinity of the proposed intersection. The study intersections have good sight lines with appropriate maintenance and operate satisfactorily with no apparent issue.

STREET IMPROVEMENT PROJECTS

Sequim

I have reviewed the City of Sequim's Exhibit A 2018 – 2023 Transportation Improvement Program, copy attached. The City TIP #12 indicates a project to conduct shoreline repair on West Sequim Bay Road

MARINER INVESTORS
 C/O CA Homes, Inc.
 Attn: Christopher Anderson, Owner
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WSDOT

Review of the WSDOT website indicated no projects on SR's near the site.

HORIZON YEAR CONDITIONS "WITHOUT" THE PROJECT

Figure 3 shows the projected 2023 PM peak hour traffic volumes "without" the project. These volumes include the existing traffic volume counts plus background growth. The traffic growth per WSDOT Annual Traffic Report data on SR – 101 at MP 265 after ramp Sequim Avenue, copy attached, is about 1.6% per year. In order to ensure a conservative analysis a 2% per year growth factor is used.

TRIP GENERATION AND DISTRIBUTION

Definitions

A vehicle trip is defined as a single or one direction vehicle movement with either the origin or destination (exiting or entering) inside the proposed development.

Traffic generated by development projects consists of the following types:

Pass-By Trips:	Trips made as intermediate stops on the way from an origin to a primary trip destination.
Diverted Link Trips:	Trips attracted from the traffic volume on a roadway within the vicinity of the generator but which require a diversion from that roadway to another roadway in order to gain access to the site.
Captured Trips:	Site trips shared by more than one land use in a multi-use development.
Primary (New) Trips:	Trips made for the specific purpose of using the services of the project.

Trip Generation

The proposed Mariners Outlook project is expected to generate the vehicular trips during the average weekday, street traffic AM and PM street peak hours as shown in Table 2. The trip generation for the project is calculated using trip rates from the Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition, for Single-Family Detached Housing (ITE Land Use Code 210). All site trips made by all vehicles for all purposes, including commuter, visitor, and service and delivery vehicle trips are included in the trip generation values.

MARINER INVESTORS
 C/O CA Homes, Inc.
 Attn: Christopher Anderson, Owner
 October 19, 2018
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TABLE 2 - VEHICULAR TRIP GENERATION MARINERS OUTLOOK - SEQUIM TRAFFIC IMPACT ANALYSIS							
Time Period	Size	TG Rate (X)	Enter %	Enter Trips	Exit %	Exit Trips	Total (T)
PROPOSED: Single-Family Detached Housing (ITE LUG 210; 80 SFDU)							
Weekday	80	9.44	50%	377.6	50%	377.6	755.2
AM peak hour	80	0.74	25%	14.8	75%	44.4	59.2
PM peak hour	80	0.99	63%	49.9	37%	29.3	79.2

T = trips, X = number of lots/units

The traffic associated with the Mariners Outlook is projected at 79 weekday PM peak hour trips.

Trip Distribution

Figure 3 shows the site generated traffic assigned to the street system. Trips to and from the site were distributed to the surrounding road network based on the characteristics of the network, existing traffic volume patterns and the location of likely trip origins and destinations (residential, business, shopping (comparison shoppers), social and recreational opportunities).

HORIZON YEAR CONDITIONS "WITH" THE PROJECT

Traffic Volumes

Figure 3 shows the projected 2023 PM peak hour traffic volumes "with" the proposed project at the analysis and site access intersections. The site generated peak hour traffic volumes shown are added to the projected background traffic volumes to obtain the future with project volumes.

The site traffic would be dispersed between the two accesses. However to ensure a conservative analysis I assigned all site traffic to the existing Mariners View Drive at West Sequim Bay Road intersection.

Level of Service

Table 1 shows the calculated LOS for the horizon year (2023) "with" and "without" project conditions at the analysis intersections. Based on my operational analysis the analyzed intersection would operate at LOS 'A' for the "with" the project conditions that meets the City criteria.

Site Access

Access to the project would be via the existing Mariners View Drive at West Sequim Bay Road and a new intersection with West Sequim Bay Road. The installation of intersection ahead

MARINER INVESTORS
 C/O CA Homes, Inc.
 Attn: Christopher Anderson, Owner
 October 19, 2018
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TABLE 3 - TRAFFIC IMPACT FEE MARINERS OUTLOOK - SEQUIM TRAFFIC IMPACT ANALYSIS						
Use	Units	City TIF/rate	Estimated TIF	City	ITE	Refined TIF
SFDU	80	\$ 2,491.00	\$ 199,280	1.00	0.99	\$ 197,287

Rate per SMC 22.04.110 Transportation impact fee, available online 08.28.2018

The fee schedule notes a rate per PM peak hour trip of \$2,244

A TIF of \$197,287 is calculated, per the Trip Generation 10th Edition data, for the 80 lot project (\$2,466.09 per SFDU).

The City will require that the project site access and circulation be constructed in conformance to City requirements.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This report analyzed the traffic impact for the 80 lot Mariners Outlook SFDU residential project located west of W. Sequim Bay Road and north of Mariners View Drive in the City of Sequim. The project is to be constructed in four phases. Access to the project would be via a new intersection on W. Sequim Bay Rd. and via existing Mariners View Drive intersection with W. Sequim Bay Road.

Existing traffic data was obtained at the street intersections identified for analysis. Future horizon year traffic volumes were derived using a conservative growth factor of two percent per year. Level of service analyses were performed for existing and projected future horizon traffic volumes during the weekday PM peak hour. The evaluation of the traffic impact of the proposed project included adding project generated traffic to the future traffic volume projections and calculating the level of service. The "with" project traffic operations were then compared to the "without" project operations. The comparison of traffic operations "with" and "without" the project identified that the project would not cause a significant adverse affect on the operation of the study intersections. In addition, sight lines and safety inspection were conducted at the study intersections and no apparent deficiencies (with vegetation maintained) were noted.

Based on my analysis I recommend that Mariners Outlook be allowed with the following traffic impact mitigation measures.

- Construct site in accordance with applicable City requirements.
- Install intersection "W2-2" signs on West Sequim Bay Road in advance of both the existing Mariners View Drive and the proposed Site Access intersection per applicable requirements.

MARINER INVESTORS
C/O CA Homes, Inc.
Attn: Christopher Anderson, Owner
October 19, 2018
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- Put in a "STOP" sign on the Site Access street approach to West Sequim Bay Road per relevant criteria.
- Pay lawful Traffic Impact Fee.

If you have any questions you can contact me at 206.762.1978 or email me at jaketraffic@comcast.com.



MJJ: mjj EXPIRES 4/3/2020

Very truly yours,

Mark J. Jacobs, PE, PTOE, President
JAKE TRAFFIC ENGINEERING, INC.

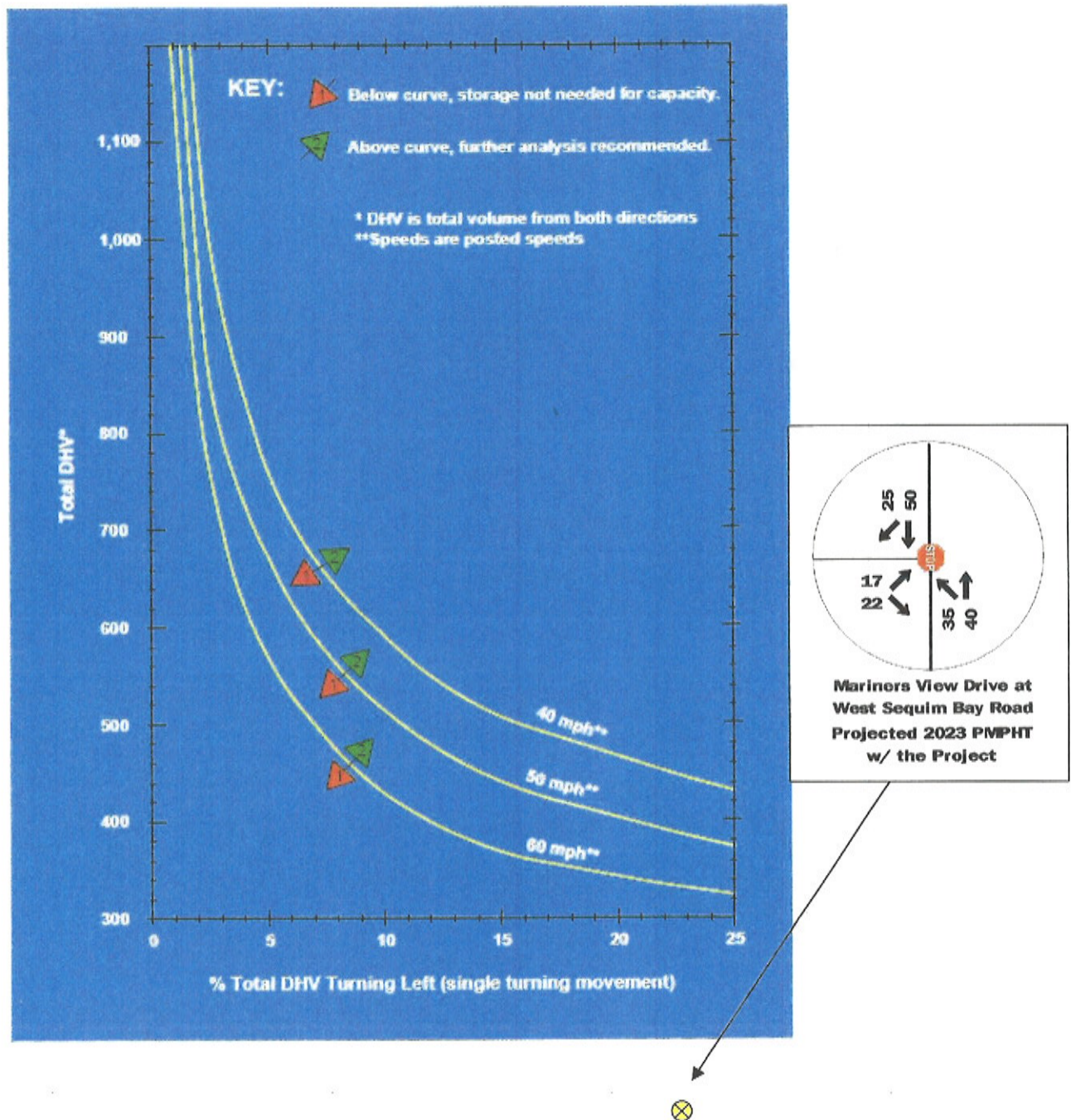
10.19.2018

TABLE 1 - PM PEAK HOUR LEVEL OF SERVICE MARINERS OUTLOOK - SEQUIM TRAFFIC IMPACT ANALYSIS				
INTERSECTION	APPROACH	EXISTING	2023 W/O PROJECT	2023 W/ PROJECT
1. Mariners View Drive at West Sequim Bay Road	Overall EB	A (0.5) A (8.7)	A (1.1) A (8.9)	A (3.3) A (9.3)
2. Site Access at West Sequim Bay Road	Overall EB	— —	— —	A* —

* LOS determined via Traffic Engineering Inspection.

Number shown in parenthesis is the average control delay in seconds per vehicle for the intersection as a whole or approach movement, which determines the LOS per the Highway Capacity Manual.

Exhibit 1310-7a Left-Turn Storage Guidelines: Two-Lane, Unsignalized

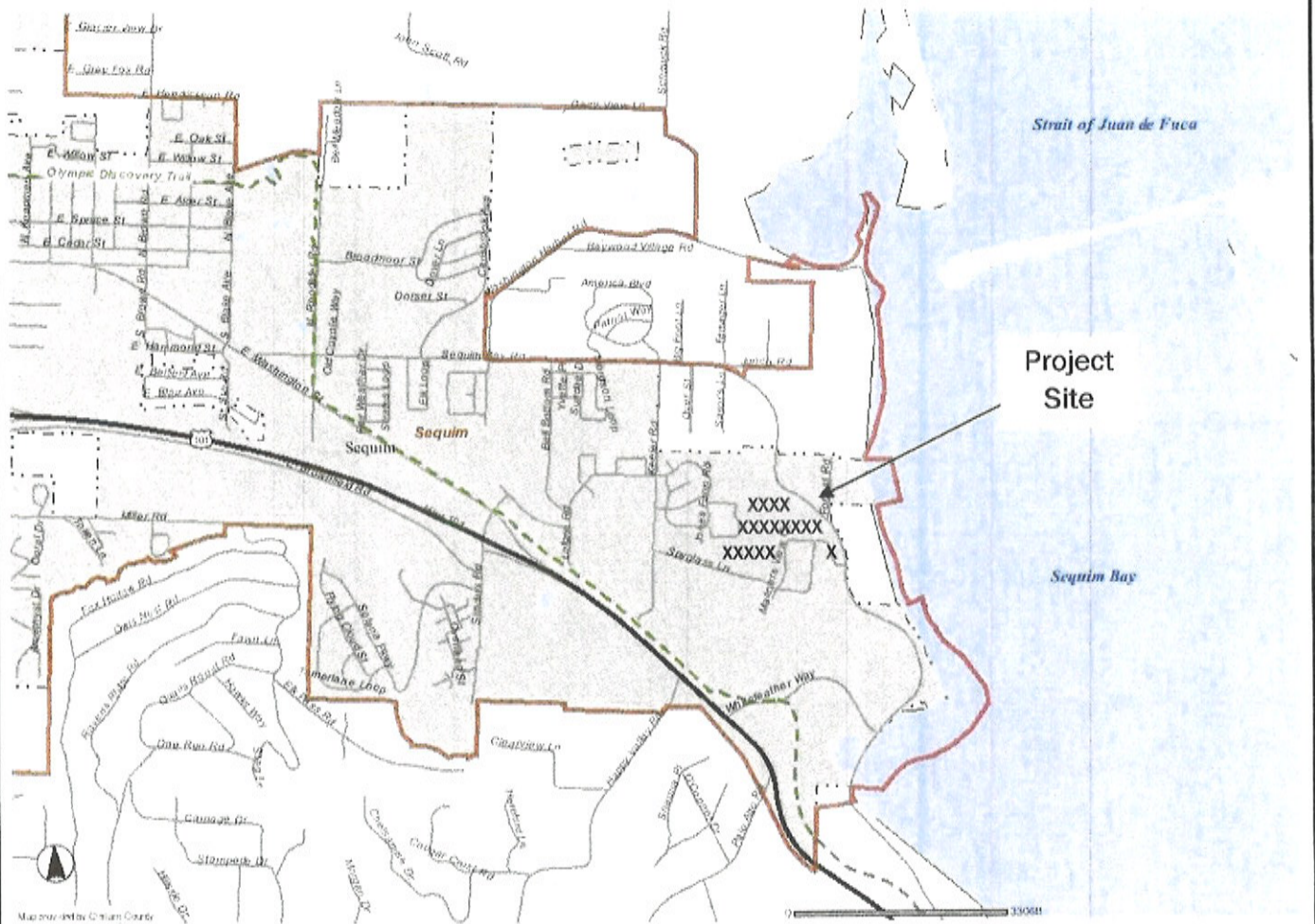


Project: Mariners Outlook - Sequim

Location: West of W. Sequim Bay Road and north of Mariners View Drive



NORTH



JTE, Inc.
FIGURE 1

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MARINERS OUTLOOK - SEQUIM
TRAFFIC IMPACT ANALYSIS

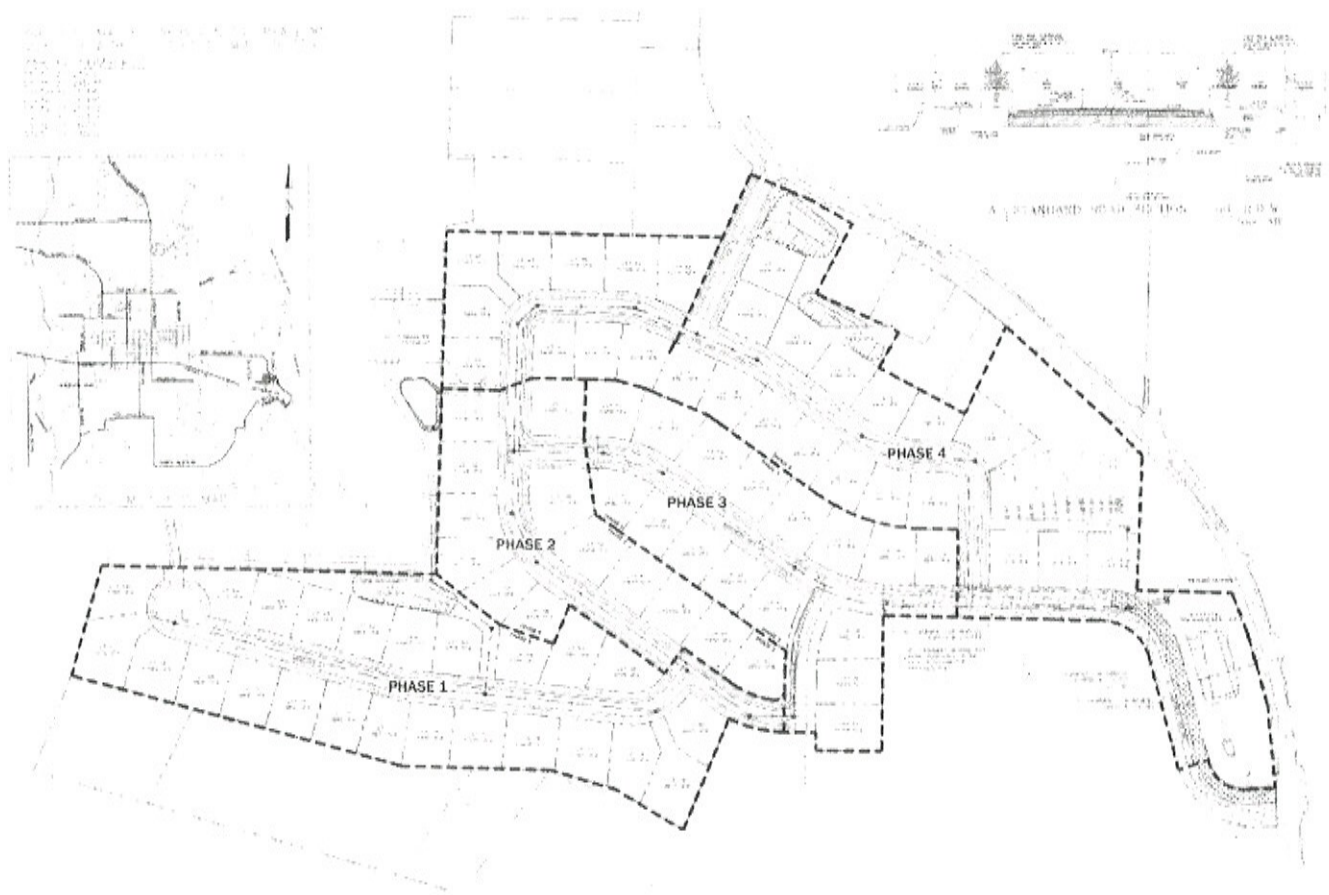
VICINITY MAP

Project: Mariners Outlook - Sequim

Location: West of W. Sequim Bay Road and north of Mariners View Drive



NORTH



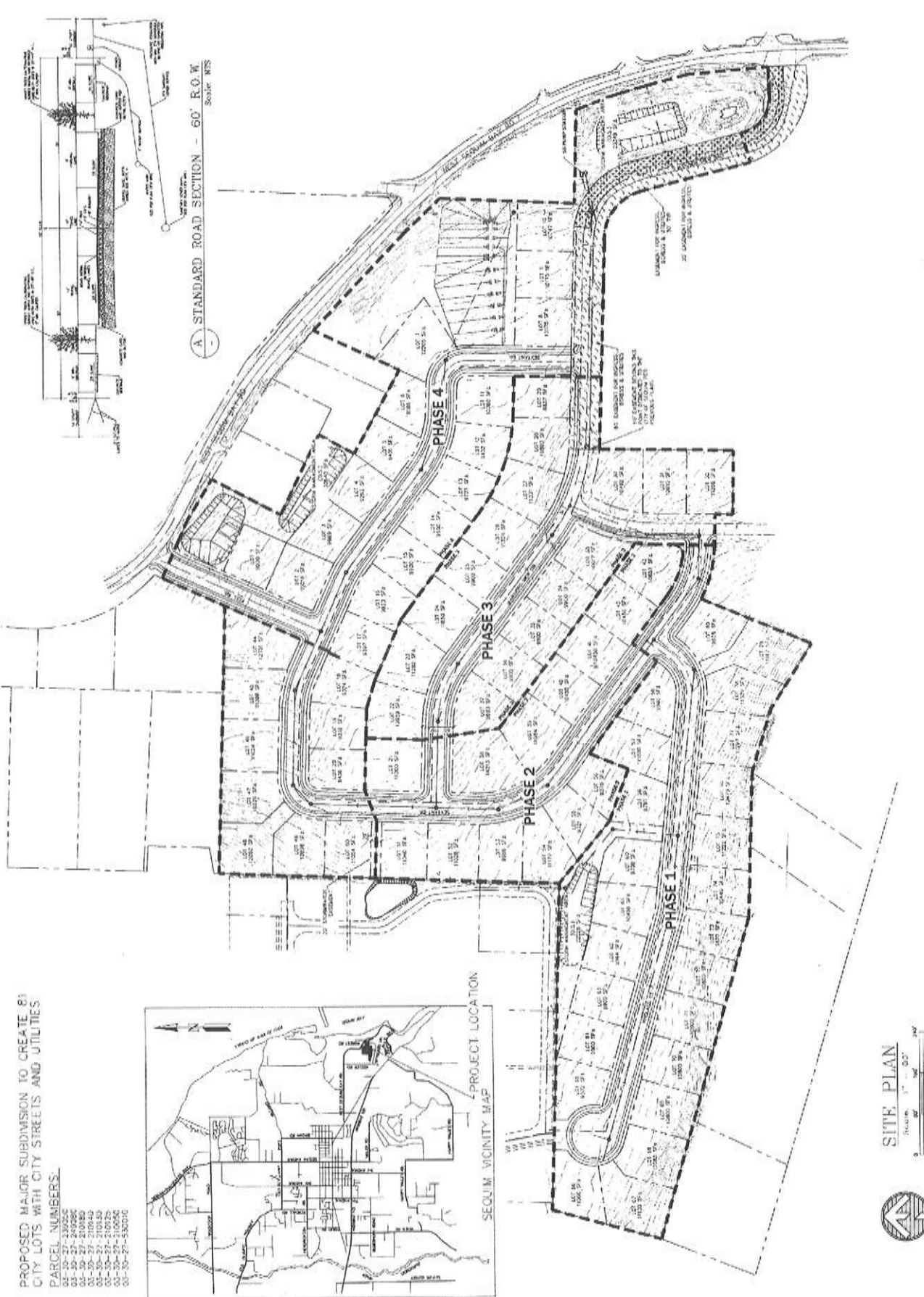
Note: An 8.5 x 11" copy of the Site Plan is included with this report

JTE, Inc.
FIGURE 2

Reprint in Color Only

MARINERS OUTLOOK - SEQUIM
TRAFFIC IMPACT ANALYSIS

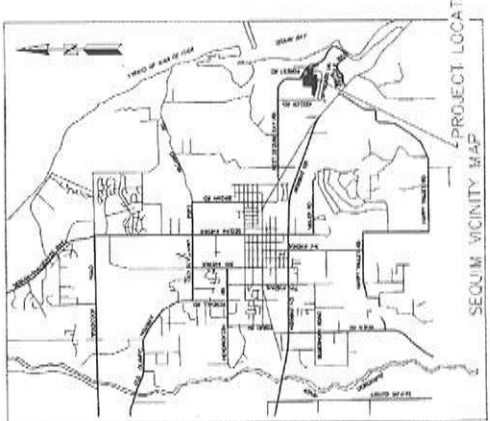
PRELIMINARY SITE PLAN

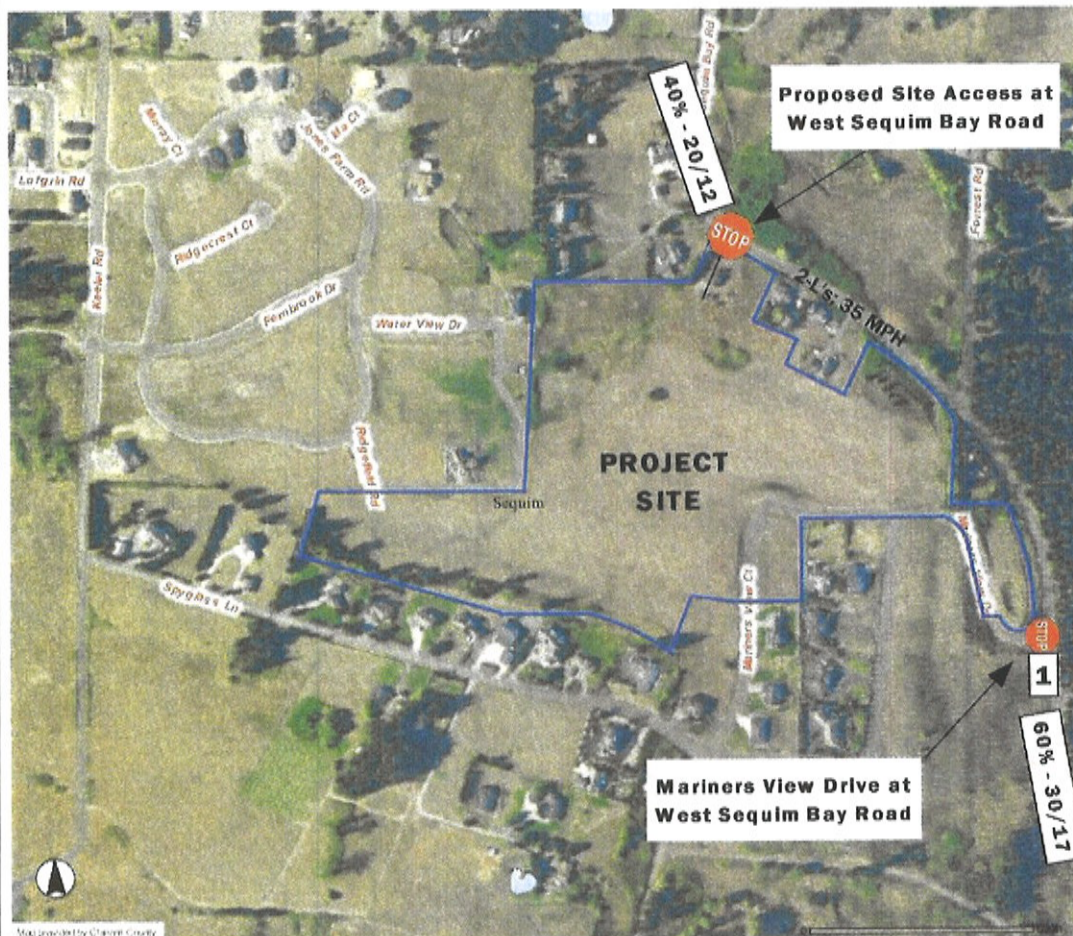


PROPOSED MAJOR SUBDIVISION TO CREATE 81 CITY LOTS WITH CITY STREETS AND UTILITIES

PARCEL NUMBERS:

- 04-10-27-130000
- 04-10-27-250000
- 04-10-27-210000
- 04-10-27-210000
- 04-10-27-210000
- 04-10-27-210000
- 04-10-27-210000
- 04-10-27-210000

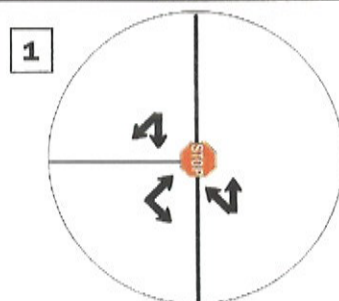




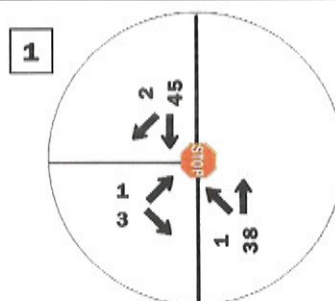
LEGEND

- Approach Lane & Direction
- STOP Stop Sign
- [X] Analysis I/S #
- X-L's # of Travel Lanes
- XX MPH Posted Speed Limit

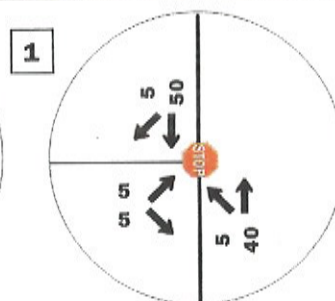
Image obtained from Clallam County GIS



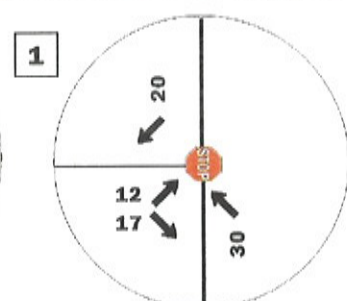
Geometrics and Traffic Control



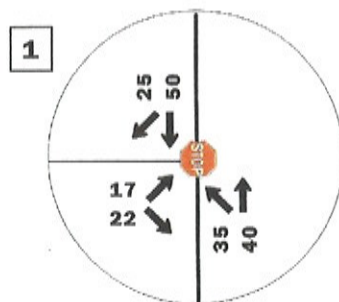
Existing PM Peak Hour Traffic
Wednesday 09.12.2018
1600 - 1800



Projected 2023 PMPHT
w/o the Project



Project PMPHT
Note: The site trips all assigned to existing I/S to ensure a conservative analysis



Projected 2023 PMPHT
w/ the Project

PM Peak Hour Traffic

Entering: 50
Exiting: 29

XX% Distribution - Enter/Exit Peak Hour Trips

JTE, Inc.
FIGURE 3

Reprint in Color Only

MARINERS OUTLOOK - SEQUIM TRAFFIC IMPACT ANALYSIS

TRAFFIC INFORMATION

APPENDIX



Prepared for: **Jake Traffic Engineering, Inc.**
Traffic Count Consultants, Inc.

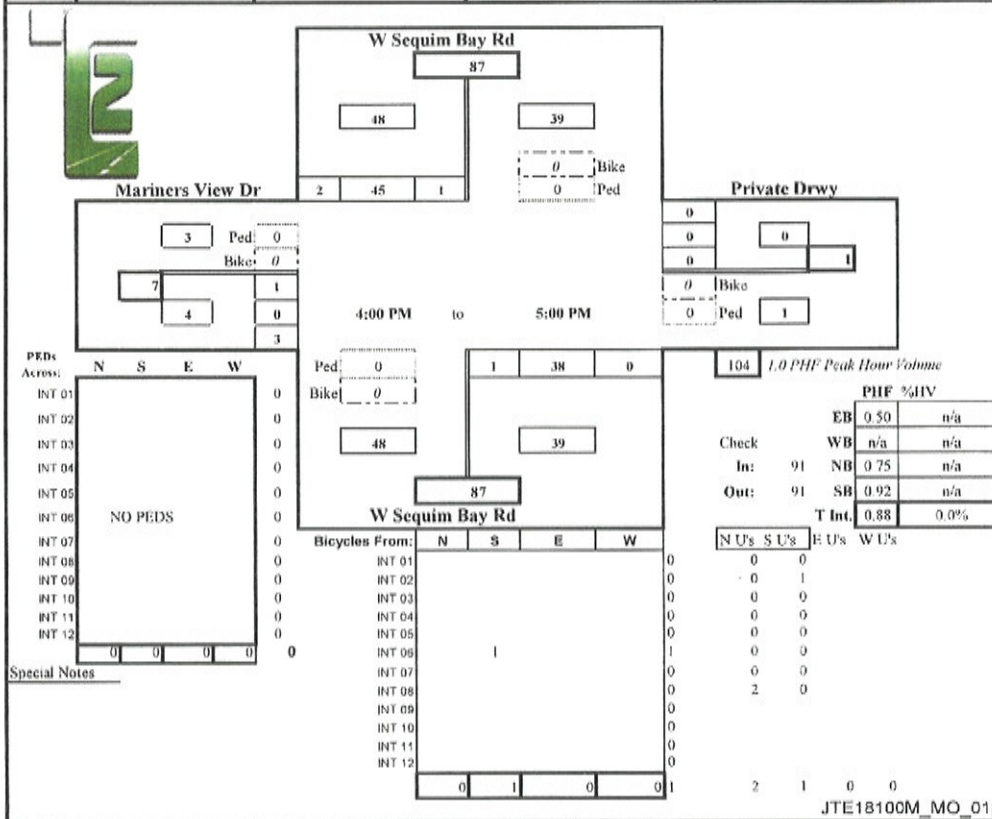
Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: W Sequim Bay Rd & Mariners View Dr
Location: Sequim, Washington

Date of Count: Wed 9/12/2018
Checked By: Jess




Time Interval Ending at	From North on (SB) W Sequim Bay Rd				From South on (NB) W Sequim Bay Rd				From East on (WB) Private Drwy				From West on (EB) Mariners View Dr				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	0	10	1	0	0	10	0	0	0	0	0	0	0	0	0	21
4:30 P	0	0	12	1	0	1	7	0	0	0	0	0	0	0	0	1	22
4:45 P	0	0	12	0	0	0	13	0	0	0	0	0	0	0	0	1	26
5:00 P	0	1	11	0	0	0	8	0	0	0	0	0	0	1	0	1	22
5:15 P	0	0	6	0	0	2	10	0	0	0	0	0	0	0	0	0	18
5:30 P	0	0	11	0	0	0	11	0	0	0	0	0	0	1	0	0	23
5:45 P	0	0	7	0	0	1	6	0	0	0	0	0	0	0	0	0	14
6:00 P	0	0	6	0	0	0	7	0	0	0	0	0	0	0	0	0	13
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	0	1	75	2	0	4	72	0	0	0	0	0	0	2	0	3	159
Peak Hour: 4:00 PM to 5:00 PM																	
Total	0	1	45	2	0	1	38	0	0	0	0	0	0	1	0	3	91
Approach	48				39				0				4				91
%HV	n/a				n/a				n/a				n/a				0.0%
PHF	0.92				0.75				n/a				0.50				0.88



Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations						
Traffic Vol, veh/h	1	3	1	38	45	2
Future Vol, veh/h	1	3	1	38	45	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	3	1	41	49	2

Major/Minor	Minor2	Major1	Major2
-------------	--------	--------	--------

Conflicting Flow All	93	50	51	0	-	0
Stage 1	50	-	-	-	-	-
Stage 2	43	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	907	1018	1555	-	-	-
Stage 1	972	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	906	1018	1555	-	-	-
Mov Cap-2 Maneuver	906	-	-	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	979	-	-	-	-	-

Approach	EB	NB	SB
----------	----	----	----

HCM Control Delay, s	8.7	0.2	0
HCM LOS	A		




Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
-----------------------	-----	-----	-------	-----	-----

Capacity (veh/h)	1555	-	987	-	-
HCM Lane V/C Ratio	0.001	-	0.004	-	-
HCM Control Delay (s)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations						
Traffic Vol, veh/h	5	5	5	40	50	5
Future Vol, veh/h	5	5	5	40	50	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	5	5	43	54	5

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	110	57	59	0	-	0
Stage 1	57	-	-	-	-	-
Stage 2	53	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	887	1009	1545	-	-	-
Stage 1	966	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	884	1009	1545	-	-	-
Mov Cap-2 Maneuver	884	-	-	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	8.9	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
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Capacity (veh/h)	1545	-	942	-	-
HCM Lane V/C Ratio	0.004	-	0.012	-	-
HCM Control Delay (s)	7.3	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	22	35	40	50	25
Future Vol, veh/h	17	22	35	40	50	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	24	38	43	54	27

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	187	68	81	0	-	0
Stage 1	68	-	-	-	-	-
Stage 2	119	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	802	995	1517	-	-	-
Stage 1	955	-	-	-	-	-
Stage 2	906	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	781	995	1517	-	-	-
Mov Cap-2 Maneuver	781	-	-	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	906	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	3.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1517	-	889	-	-
HCM Lane V/C Ratio	0.025	-	0.048	-	-
HCM Control Delay (s)	7.4	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

(http://www.wsdot.wa.gov)

Summary Reports - Total Crashes by Year

Report Year: 2015

Report Location: City of Sequim

Report Jurisdiction: All Roads

Under 23 U.S. Code 148 and 23 U.S. Code 409, safety data, reports, surveys, schedules, list compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such report, surveys, schedules, lists, or data.

Data Charts Notes Map Additional crash data available by clicking on map marker.



(<http://www.wsdot.wa.gov>)

Summary Reports - Total Crashes by Year

Report Year: 2017

Report Location: City of Sequim

Report Jurisdiction: All Roads

Under 23 U.S. Code 148 and 23 U.S. Code 409, safety data, reports, surveys, schedules, list compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such report, surveys, schedules, lists, or data.



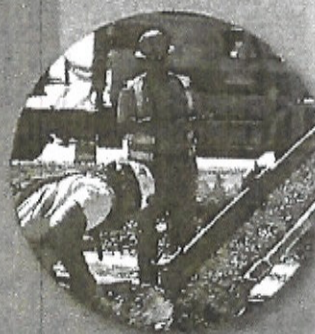
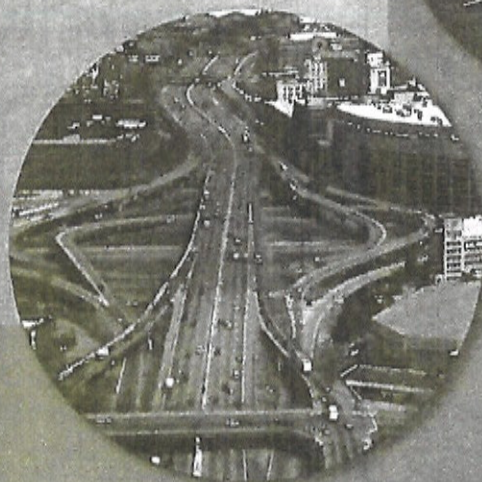
Exhibit A: 2018-2023 Transportation Improvement Program

#	Project Type	Location	Cost Estimate (thousands)	2018	2019	2020	2021	2022	2023
1	Pavement Rehab	City Wide pavement rehab	\$2,411	\$537	\$281	\$294	\$307	\$321	\$671
2	Pavement Rehab	North Sequim Ave pavement rehab	\$280					\$280	
3	Pavement Rehab	Washington St pavement rehab	\$3,045				\$375	\$1,305	\$1,365
4	Improvement	Brown Rd widening & sidewalks (Fir to Hendrickson)	\$571			\$571			
5	Improvement	E Fir sidewalks and improvements (Sequim to Blake)	\$1,696				\$94	\$783	\$819
6	Improvement	N 9th Avenue widening & new construction (Brackett Road to Hendrickson)	\$4,177	\$157	\$164	\$1,885	\$1,971		
7	Improvement	Kendall and Hendrickson intersection	\$409			\$409			
8	Improvement	S 7th sidewalks and improvements (Comfort to McCurdy)	\$3,774					\$250	\$3,524
9	Improvement	Washington St signals timing & coordination	\$150	\$150					
10	Improvement	W Fir sidewalk and improvements (Sequim to 5th)	\$3,860	\$1,781	\$2,079				
11	Improvement	West Prairie complete street (Sequim to 5th)	\$1,649	\$115	\$440	\$42	\$481	\$46	\$525
12	Improvement	West Sequim Bay Rd shoreline repair	\$68						\$68
13	Improvement	West Washington eastbound aux lane at Priest Rd	\$93			\$16	\$77		
14	Improvement	US 101/Whitefeather intersection improvements	\$532					\$298	\$234
15	Planning	Transportation Master Plan update	\$50		\$50				
16	Pedestrian/Bike	Etta St active alleyway (Sequim to Sunnyside)	\$644		\$98	\$546			
17	Pedestrian/Bike	Bell Cr trail	\$1,674					\$499	\$1,175

#	Project Type	Location	Cost Estimate (thousands)	2018	2019	2020	2021	2022	2023
18	Pedestrian/Bike	ODT E Hendrickson extension (UGA)	\$335	\$164	\$171				
19	Pedestrian/Bike	Sunnyside sidewalk	\$78						\$78
20	Pedestrian/Bike	Whitefeather trail	\$532				\$120	\$412	
21	Connectivity	E Washington Pl new construction (Blake to Rhodefer)	\$406				\$85	\$321	
22	Bicycle Facilities	E Washington Street bicycle facilities (Sequim Avenue to Simdars Road)	\$170						\$170
23	Bicycle Facilities	N Sequim Avenue bicycle facilities (Washington Street to Fir Street)	\$30						\$30
24	Bicycle Facilities	ODT Realignment in Carrie Blake Park	\$80						\$80
25	Bicycle Facilities	W Washington Street bicycle facilities (Priest Road to 5th Avenue)	\$70						\$70
26	Shared Use Path	W Sequim Bay Road shared use path (E Washington Street to Whitefeather Way)	\$715						\$715
27	Pedestrian Improvement	S 3rd Ave Pedestrian Sidewalk/Pathways	\$300						\$300
28	Pedestrian Improvement	Active Alleyway on Seal Street (Washington Street and Cedar)	\$108						\$108
29	Pedestrian Improvement	Brackett Road sidewalk (N 9th Avenue to Priest Road)	\$650						\$650
30	Pedestrian Improvement	Port Williams Road widening and pedestrian facilities	\$650						\$650
31	New Signal	Prairie Street & S Sequim Avenue new signal	\$375						\$375
32	New Signal Study	Washington Street Connections: Brown Road to Rhodefer Road study	\$50						\$50
33	New Signal	US-101 Ramps & S Sequim Avenue new signals	\$610						\$610
34	New Signal	Fir & N Sequim Avenue signal	\$360						\$360
35	Intersection Improvement	W Washington Street & 2nd Avenue intersection improvement	\$275						\$275
36	Intersection Improvement	Happy Valley Road & US 101 intersection improvement	\$450						\$450
37	Intersection Improvement	Palo Alto Road & US 101 intersection improvement	\$450						\$450
38	Facility Improvement	E Washington St Bus Turn-outs from Sequim to Rhodefer	\$149						\$149
39	Facility Improvement	W Sequim Bay Road improvements (Whitefeather Way to City Limits)	\$500						\$500
40	Road Connectivity	S 7th Avenue new construction (McCurdy Road to Reservoir Road)	\$3,700						\$3,700
41	Road Connectivity	W Norman Street new construction (S 7th Avenue to S 3rd Avenue)	\$1,000						\$1,000
42	Road Connectivity	W Brownfield Road Realignment from Sequim Ave to 3rd Ave	\$1,469						\$1,469
43	Road Connectivity	W Maple Street Extension from S 5th Ave & S 4th Ave	\$852						\$852
44	Road Connectivity	Simdars Road/US 101 Interchange	\$3,400						\$3,400
45	City Wide Projects	City Wide Safety Projects	\$401	\$60	\$62	\$65	\$68	\$71	\$75
46	City Wide Projects	City Wide Minor Construction (small works)	\$150	\$25	\$25	\$25	\$25	\$25	\$25
48	City Wide Projects	City Wide Misc Right of Way	\$30	\$5	\$5	\$5	\$5	\$5	\$5
		denotes growth related projects		\$2,994	\$3,375	\$3,858	\$3,608	\$4,616	\$43,428

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at its junction with the major road. For simple unchannelized intersections involving low design speeds and stop or signal control, it may be desirable to warp the crowns of both roads into a plane at the intersection; the appropriate plane depends on the direction of drainage and other conditions. Changes from one cross slope to another should be gradual. Intersections at which a minor road crosses a multilane divided highway with a narrow median on a superelevated curve should be avoided whenever practical because of the difficulty in adjusting grades to provide a suitable crossing. Gradelines of separate turning roadways should be designed to fit the cross slopes and longitudinal grades of the intersection legs.

The alignment and grades are subject to greater constraints at or near intersections than on the open road. At or near intersections, the combination of horizontal and vertical alignment should provide traffic lanes that are clearly visible to drivers at all times, clearly understandable for any desired direction of travel, free from the potential for conflicts to appear suddenly, and consistent in design with the portions of the highway just traveled.

The combination of vertical and horizontal curvature should allow adequate sight distance at an intersection. As discussed in Section 3.5 on "Combinations of Horizontal and Vertical Alignment," a sharp horizontal curve following a crest vertical curve is undesirable, particularly on intersection approaches.

9.5 INTERSECTION SIGHT DISTANCE

9.5.1 General Considerations

Each intersection has the potential for several different types of vehicular conflicts. The possibility of these conflicts actually occurring can be greatly reduced through the provision of proper sight distances and appropriate traffic controls. The avoidance of conflicts and the efficiency of traffic operations still depend on the judgment, capabilities, and response of each individual driver.

Stopping sight distance is provided continuously along each highway or street so that drivers have a view of the roadway ahead that is sufficient to allow drivers to stop. The provision of stopping sight distance at all locations along each highway or street, including intersection approaches, is fundamental to intersection operation.

Vehicles are assigned the right-of-way at intersections by traffic-control devices or, where no traffic-control devices are present, by the rules of the road. A basic rule of the road, at an intersection where no traffic-control devices are present, requires the vehicle on the left to yield to the vehicle on the right if they arrive at approximately the same time. Sight distance is provided at intersections to allow drivers to perceive the presence of potentially conflicting vehicles. This should occur in sufficient time for a motorist to stop or adjust their speed, as appropriate, to avoid colliding in the intersection. The methods for determining the sight distances needed by drivers approaching intersections are based on the same principles as stopping sight distance, but incorporate modified assumptions based on observed driver behavior at intersections.

The driver of a vehicle approaching an intersection should have an unobstructed view of the entire intersection, including any traffic-control devices, and sufficient lengths along the intersecting highway to permit the driver to anticipate and avoid potential collisions. The sight distance needed under various

assumptions of physical conditions and driver behavior is directly related to vehicle speeds and to the resultant distances traversed during perception-reaction time and braking.

Sight distance is also provided at intersections to allow the drivers of stopped vehicles a sufficient view of the intersecting highway to decide when to enter the intersecting highway or to cross it. If the available sight distance for an entering or crossing vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions. However, in some cases, a major-road vehicle may need to stop or slow to accommodate the maneuver by a minor-road vehicle. To enhance traffic operations, intersection sight distances that exceed stopping sight distances are desirable along the major road.

9.5.2 Sight Triangles

Specified areas along intersection approach legs and across their included corners should be clear of obstructions that might block a driver's view of potentially conflicting vehicles. These specified areas are known as clear sight triangles. The dimensions of the legs of the sight triangles depend on the design speeds of the intersecting roadways and the type of traffic control used at the intersection. These dimensions are based on observed driver behavior and are documented by space-time profiles and speed choices of drivers on intersection approaches (12). Two types of clear sight triangles are considered in intersection design—approach sight triangles and departure sight triangles.

Approach Sight Triangles

Each quadrant of an intersection should contain a triangular area free of obstructions that might block an approaching driver's view of potentially conflicting vehicles. The length of the legs of this triangular area, along both intersecting roadways, should be such that the drivers can see any potentially conflicting vehicles in sufficient time to slow or stop before colliding within the intersection. Figure 9-15A shows typical clear sight triangles to the left and to the right for a vehicle approaching an uncontrolled or yield-controlled intersection.

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Metric				US Customary			
Design speed (km/h)	Stopping sight distance (m)	Intersection sight distance for passenger cars		Design speed (mph)	Stopping sight distance (ft)	Intersection sight distance for passenger cars	
		Calculated (m)	Design (m)			Calculated (ft)	Design (ft)
20	20	41.7	45	15	80	165.4	170
30	35	62.6	65	20	115	220.5	225
40	50	83.4	85	25	155	275.6	280
50	65	104.3	105	30	200	330.8	335
60	85	125.1	130	35	250	385.9	390
70	105	146.0	150	40	305	441.0	445
80	130	166.8	170	45	360	496.1	500
90	160	187.7	190	50	425	551.3	555
100	185	208.5	210	55	495	606.4	610
110	220	229.4	230	60	570	661.5	665
120	250	250.2	255	65	645	716.6	720
130	285	271.1	275	70	730	771.8	775
				75	820	826.9	830
				80	910	882.0	885

Note: Intersection sight distance shown is for a stopped passenger car to turn left onto a two-lane highway with no median and grades 3 percent or less. For other conditions, the time gap must be adjusted and required sight distance recalculated.

Exhibit 9-55. Design Intersection Sight Distance—Case B1—Left Turn From Stop

Sight distance design for left turns at divided-highway intersections should consider multiple design vehicles and median width. If the design vehicle used to determine sight distance for a divided-highway intersection is larger than a passenger car, then sight distance for left turns will need to be checked for that selected design vehicle and for smaller design vehicles as well. If the divided-highway median is wide enough to store the design vehicle with a clearance to the through lanes of approximately 1 m [3 ft] at both ends of the vehicle, no separate analysis for the departure sight triangle for left turns is needed on the minor-road approach for the near roadway to the left. In most cases, the departure sight triangle for right turns (Case B2) will provide sufficient sight distance for a passenger car to cross the near roadway to reach the median. Possible exceptions are addressed in the discussion of Case B3.

If the design vehicle can be stored in the median with adequate clearance to the through lanes, a departure sight triangle to the right for left turns should be provided for that design vehicle turning left from the median roadway. Where the median is not wide enough to store the design vehicle, a departure sight triangle should be provided for that design vehicle to turn left from the minor-road approach.

The median width should be considered in determining the number of lanes to be crossed. The median width should be converted to equivalent lanes. For example, a 7.2-m [24-ft] median should be considered as two additional lanes to be crossed in applying the multilane highway adjustment for time gaps in Exhibit 9-54. Furthermore, a departure sight triangle for left turns from the median roadway should be provided for the largest design vehicle that can be stored on